



PATENT

Attorney Docket No.: 040879-5075-04

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of: )  
Stanford W. CRANE et al. ) Confirmation No.: 6459  
Application No.: 10/759,228 ) Group Art Unit: 2833  
Filed: January 20, 2004 ) Examiner: Gary F. Paumen  
For: ELECTRICAL CONNECTOR ) **Mail Stop Appeal Brief Patents**  
HAVING STAGGERED )  
HOLD-DOWN TABS )

Commissioner for Patents  
**Mail Stop Appeal Brief Patents**  
Alexandria, VA 22314

Sir:

**APPELLANTS' BRIEF UNDER  
37 C.F.R. § 41.37 TRANSMITTAL FORM**

1. Transmitted herewith is an Appellants' Brief Under 37 C.F.R. § 41.37 which is being submitted further to the Notice of Appeal filed May 12, 2006.

2. Additional papers enclosed:

- ☐ Request for Presence at the Appeal Conference
- ☐ Form PTO-1449, \_\_\_\_\_ references included
- ☐ Citations
- ☐ Declaration of Biological Deposit
- ☐ Submission of "Sequence Listing", computer readable copy and/or amendment pertaining thereto for biotechnology invention containing nucleotide and/or amino acid sequence.

12/12/2006 JADD01 00000062 500310 10759220

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02 FC:1255 2160.00 DA

## 3. Oral Hearing Under 37 C.F.R. § 41.47

- ☐ Oral hearing is hereby requested.
- ☐ Fee under 37 C.F.R. § 41.29(b)(3) is enclosed.

4. Extension of Time

The proceedings herein are for a patent application and the provisions of 37 C.F.R. § 1.136(a) apply.

- ☐ An extension of time was previously secured. Applicant believes that no additional extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.
- ☒ Applicants petition for an extension of time, the fees for which are set out in 37 C.F.R. § 1.17(a), for the total number of months checked below:

Total Months Requested	Fee for Extension	[Fee for Small Entity]
<input type="checkbox"/> one month	\$ 120.00	\$ 60.00
<input type="checkbox"/> two months	\$ 450.00	\$ 225.00
<input type="checkbox"/> three months	\$ 1,020.00	\$ 510.00
<input type="checkbox"/> four months	\$ 1,590.00	\$ 795.00
<input checked="" type="checkbox"/> five months	\$ 1,450.00	\$ 1,080.00

Extension of time fee due with this request: **\$1,450.00.**

If an additional extension of time is required, please consider this a Petition therefor.

- ☐ An extension for \_\_\_\_\_ months has already been secured and the fee paid therefor of \$\_\_\_\_\_ is deducted from the total fee due for the total months of extension now requested.

5. Constructive Petition

- ☒ EXCEPT for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account 50-0310. This paragraph is intended to be a CONSTRUCTIVE PETITION FOR EXTENSION OF TIME in accordance with 37 C.F.R. § 1.136(a)(3).

6. Fee Payment

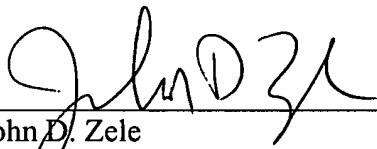
- ☐ No fee is to be paid at this time.
- ☒ Please charge Deposit Account No. 50-0310 the total amount due of **\$1,950.00** (\$500.00 for filing a brief in support of an Appeal and \$1,450.00 for five (5) month petition for extension of time fee).
- ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, including fees due under 37 C.F.R. §§ 1.16 and 1.17, or credit any overpayment to Deposit Account 50-0310.

Respectfully submitted,

**MORGAN LEWIS & BOCKIUS LLP**

Dated: December 11, 2006

By: \_\_\_\_\_

  
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

<i>In re</i> Application of:	)	
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For: ELECTRICAL CONNECTOR HAVING	)	<b>Mail Stop Appeal Brief - Patents</b>
STAGGERED HOLD-DOWN TABS	)	

Commissioner for Patents  
**Mail Stop Appeal Brief - Patents**  
Alexandria, VA 22314

Sir:

**APPELLANTS' BRIEF UNDER 37 C.F.R. § 41**

This brief is in furtherance of the Notice of Appeal, filed in the above-identified patent application on May 12, 2006, the period for response having been extended through December 12, 2006 by a petition for a five (5) month extension of time and fee filed concurrently herewith. A fee of \$500.00 required under 37 C.F.R. §41.20(b)(2) is also filed concurrently herewith.

1. **The Real Party in Interest**

The real party in interest in this appeal is Silicon Bandwidth, Inc. of San Jose, CA.

2. **Related Appeals and Interferences**

Appellants are not aware of any other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this appeal.

3. **Status of Claims**

The status of the claims is as follows upon filing of this Appeal Brief:

Claims canceled: 2-29 and 31-51.

Claims withdrawn from consideration but not canceled: None.

Claims pending: 1, 30, and 52-65.

Claims objected to: None

Claims allowed: None

Claims rejected: 1, 30, and 52-65.

The claims on appeal are: 1, 30, and 52-65.

4. **The Status of Amendments**

No amendments to the claims have been introduced after the final Office Action.

Accordingly, all amendments to the claims have been entered and considered on the merits. A copy of the pending claims is presented in the attached Appendix A.

5. **Summary of Claimed Subject Matter**

The claims are directed to a modular electrical connector including connector end pieces having staggered hold-down tabs or mounting extensions. Prior art connectors have fasteners aligned with the longitudinal axis of the connector housing. (Specification, ¶ 0005). As a result,

they tend to rock or pivot about the longitudinal axis when mounted to a printed circuit board.

(Id.). The rocking causes stresses that, immediately or over time, lead to damage to the male and/or female contacts. (Id.). Damage includes bending, breaking or misalignment of the connector pins. (Id.).

As claimed, the connector includes separate end pieces having staggered hold-down tabs. The staggered hold-down tabs enable the connector housing to be secured to a printed circuit board in a manner that suppresses rocking or other movement. (Id. at ¶ 0055). The staggered arrangement also allows the connectors to be nested together, thereby increasing the density of connections possible when multiple connectors are used together. (Id. at ¶ 0056).

Claim 1 relates to an electrical connector (e.g., Figs. 10-16B, 500) for mounting to a substrate (e.g., 52). The connector comprises a modular insulative connector housing having first and second end pieces (e.g., 571, 572) having holes formed therethrough. A plurality of contact pins (505) are held in the holes of the insulative connector housing. The end pieces include first and second hold-down tabs (e.g., 532, 542), respectively, for mounting the insulative connector housing to a substrate. The first and second end pieces (e.g., 571, 572) comprise two separate pieces. The first hold-down tab (e.g., 532) extends laterally from a side of the first end piece and the second hold-down tab (e.g., 542) extends laterally from a side of the second end piece. The location of the first hold-down tab is staggered relative to the location of the second hold-down tab.

Claim 30 relates to an electrical connector assembly comprising a male connector (e.g., 100) and a female connector (e.g., 500). The male connector comprises a male connector housing (e.g., Figs. 4A-9C, 110) and a plurality of male contact pins (e.g., 105) held in the male

connector housing. The male connector housing has first and second staggered mounting extensions (e.g., 132, 142) for mounting the male connector housing to a first substrate (e.g., 50).

Further with respect to Claim 30, the female connector comprises a female connector housing (e.g., Figs. 10-16B, 510) and a plurality of female contact pins (e.g., 505) held in the female connector housing. The female connector housing has first and second end pieces (e.g., 571, 572) having holes formed therethrough for receiving the female contact pins. The end pieces also include first and second staggered mounting extensions (e.g., 532, 542), respectively, for mounting the female connector housing to a side of a second substrate (e.g., 52). The first and second end pieces (e.g., 571, 572) comprise two separate structural pieces, wherein the first mounting extension extends laterally from a side of the first end piece and the second mounting extension extends laterally from a side of the second end piece.

Claim 30 also recites that at least a portion of the male connector is adapted to be received within the female connector such that the male contact pins (e.g., 105) contact the female contact pins (e.g., 505) to establish an electrical connection therebetween. (See, e.g., Figs. 17-19).

As recited in dependent claims, the first and second end pieces may be joined together, for example, using an adhesive bond. Further, the modular electrical connector may include a center piece (e.g., 570) having holes formed therethrough. The center piece comprises a separate piece from the first and second end pieces, wherein the first and second end pieces are joined to opposite ends of the center piece, for example, using adhesive bonds. The first and second end pieces may also include a polarization features (e.g., 524-527). Finally, the electrical connector housing may be an edge connector housing.

Thus, the first and second end pieces have holes for holding the contact pins and staggered hold-down tabs to secure the connector housing to a printed circuit board so as to suppress rocking or other movement that, immediately or in time, can damage the electrical contact pins. The staggered arrangement also allows the connectors to be nested together, thereby increasing the density of connections possible when multiple connectors are used together.

**6. Grounds of Rejection to be Reviewed on Appeal**

Claims 53 and 55 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Neef*.

Claims 1, 30, and 52-65 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Neef* in view of U.S. Patent No. 4,530,561 to Tyree *et al.* (*Tyree*).

**7. Argument**

Appellants respectfully assert that the rejections under 35 U.S.C. § 103 are improper and should be reversed. In particular, Appellants maintain the positions expressed in the Request for Reconsideration filed on February 3, 2006, and provide the following arguments.

**A. The Rejection of Claims 53 and 55 is Improper**

As an initial matter, the rejection of dependent Claims 53 and 55 as being unpatentable under 35 U.S.C. § 103(a) over *Neef* is improper. Claims 53 and 55 depend ultimately from independent Claim 1. The Examiner's final rejection concedes that *Neef* fails to disclose laterally extending hold-down tabs, as recited in Claim 1. Therefore, *Neef* alone is insufficient to render Claim 1 obvious and, consequently, is insufficient alone to render obvious Claims 53 and



55, which depend from Claim 1. For at least this reason, the rejection of Claims 53 and 55 under 35 U.S.C. § 103(a) over *Neef* should be reversed.

B. The Prior Art Fails to Teach or Suggest Each of the Claim Terms

The rejection of independent Claims 1 and 30 should be reversed because the combination of *Neef* and *Tyree* fail to teach or suggest each of the limitations of these claims.

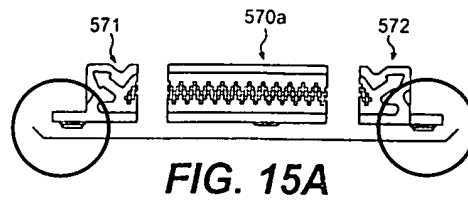
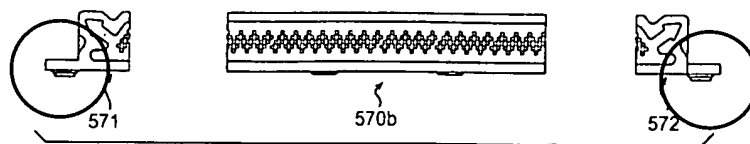
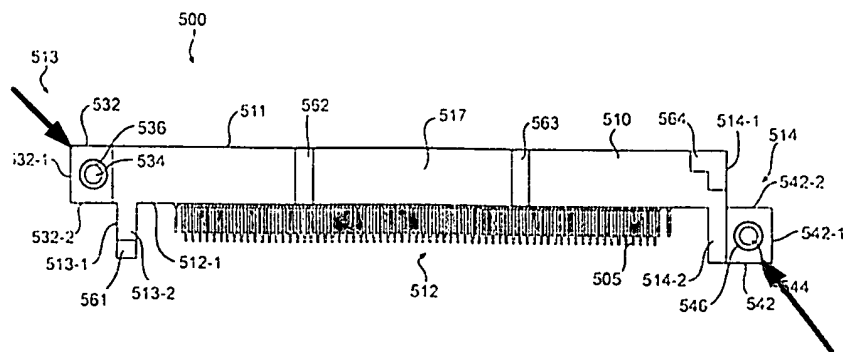
Independent Claim 1 recites, in part, a modular connector housing having “first and second end pieces including holes formed therethrough and first and second hold-down tabs,” “wherein the location of the first hold-down tab is staggered relative to the location of the second hold-down tab.” Independent Claim 30 recites, in part, a female connector housing “having first and second end pieces having holes formed therethrough ... and having first and second staggered mounting extensions.” The Examiner rejects both claims under 35 U.S.C. § 103(a) as being unpatentable over *Neef* in view *Tyree*. However, neither *Neef* nor *Tyree* discloses, teaches or suggests “first and second end pieces including holes formed therethrough and first and second hold-down tabs” that are “staggered,” as recited in Claim 1, or “first and second end pieces including holes formed therethrough ... and having first and second staggered mounting extensions,” as recited in independent Claim 30.

The meaning of “staggered” may be understood from the present specification. As described by way of example in the specification:

[0071] Hold-down tab 532 is disposed proximal the front face 511 and hold-down tab 542 is disposed proximal the back face 512. Thus, hold-down tabs 532, 542 are diagonally disposed, staggered, or offset with respect to the female connector housing 510. ...

Figure 15A-15B (below left) show an exemplary modular arrangement of the female connector of Figures 10-14. The end pieces 571, 572 have hold-down tabs 132,142 (which are circled here

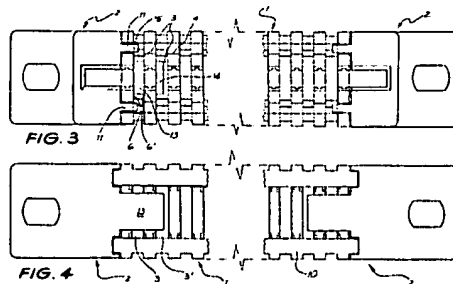
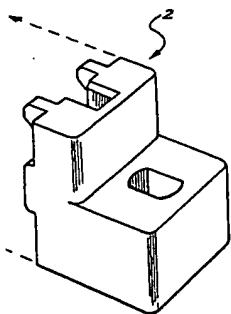
for identification) that are staggered, with the left hold-down tab proximal the front of the connector housing and the right hold-down tab proximal the back of the connector housing. Fig. 13 (below right) shows an embodiment viewed from underneath the connector. Arrows have been added to point out the hold-down tabs.

**FIG. 15A****FIG. 15B****FIG. 13**

Neither *Neef* nor *Tyree*, alone or in combination, teaches or suggests the staggered hold-down tabs or mounting extensions recited in independent claims 1 and 30 respectively. *Neef* discloses pegs 36. (*Neef*, Col 2, line 60; Fig. 3). More particularly, *Neef* does not teach or

suggest a “first hold-down tab [that] extends latterly from a side of the first end piece and [a] second hold-down tab [that] extends latterly from a side of the second end piece” or that “the location of the first hold-down tab is staggered relative to the location of the second hold-down tab,” as recited in Claim 1. *Neef* also fails to disclose “first and second staggered mounting extensions, respectively, for mounting said female connector housing to a side of a second substrate” or that “the first mounting extension extends laterally from a side of the first end piece and the second mounting extension extends laterally from a side of the second end piece” as recited in Claim 30.

The Examiner looks to *Tyree* to make up for the deficiencies of *Neef*. However, *Tyree* discloses in-line (not staggered) hold-down tabs similar to the prior art recognized in the “Background” section of the present specification. In particular, *Tyree* discloses “[a]n electrical connector including a body section 1 and feet members 2 mounted on either side.” (Abstract, lines 1-3.) Each foot member 2 includes a centrally positioned fastener hole (number not given). The feet members 2 are not staggered. (*Tyree* Figs. 3-4.)



Moreover, the feet members 2 of *Tyree* do not include “first and second end pieces including holes formed therethrough” wherein the “plurality of contact pins [are] held in the

holes” as recited in Claim 1 or “first and second end pieces having holes formed therethrough for receiving the female contact pins” as recited in Claim 30.

Thus, Appellants respectfully assert that the rejection of independent claims 1 and 30 under 35 U.S.C. § 103(a) over *Neef* in view *Tyree* is improper and should be reversed.

C. The Combination of *Neef* and *Tyree* Would Not Have Been Obvious

Combining *Neef* and *Tyree* to produce the inventions recited in independent Claims 1 and 30, respectively, would not have been obvious. As noted above, Claim 1 recites “a modular insulative connector housing having first and second end pieces including holes formed therethrough and first and second hold-down tabs, respectively, for mounting said insulative connector housing to a substrate,” where the “first and second end pieces comprising two separate pieces and the first hold-down tab extends laterally from a side of the first end piece and the second hold-down tab extends laterally from a side of the second end piece, wherein the location of the first hold-down tab is staggered relative to the location of the second hold-down tab.”

Claim 30 recites a “female connector housing having first and second end pieces having holes formed therethrough for receiving the female contact pins and having first and second staggered mounting extensions, respectively, for mounting said female connector housing to a side of a second substrate, wherein the first mounting extension extends laterally from a side of the first end piece and the second mounting extension extends laterally from a side of the second end piece.”

As the Office Action admits, *Neef* completely lacks laterally extending hold-down tabs or mounting extensions. *Tyree* discloses “[a]n electrical connector including a body section 1 and feet members 2 mounted on either end of the body section.” The body section 1 of *Tyree*, not the

feet members 2, includes contact recesses 3 for holding contacts. The feet members 2 differ from the “end pieces” of Claims 1 and 30 because (1) they are not staggered, and (2) they lack holes formed therethrough for holding the contact pins of the connector. Thus, *Neef* and *Tyree* cannot be combined to achieve the benefits of stabilizing the connector body against rocking and allowing nesting with another similarly-situated connector, as shown in Figs 9A and 9B of the application (below).

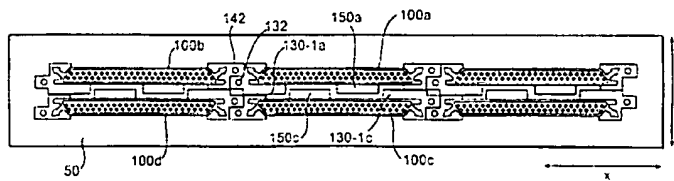


FIG. 9A

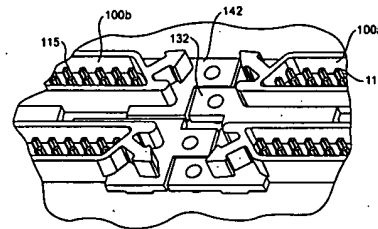


FIG. 9B

Moreover, because the feet members 2 of *Tyree* lack holes for holding the contact pins, there is no teaching or suggestion of providing “end pieces” characterized by holes for holding the contact pins and staggered hold-down tabs or mounting extensions. Thus, Appellants respectfully urge that any combination of *Neef* and *Tyree* would not produce the invention claimed in Claims 1 and 30.

MPEP § 2143.01 instructs that “[o]bviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art.”

MPEP § 2143.01 also instructs that “[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).”

(Emphasis in original.) Accordingly, there is no motivation to combine *Neef* with *Tyree* as suggested by the Final Office Action. Thus, Appellants respectfully assert that the rejection of independent Claims 1 and 30 is improper and should be reversed.

D. Dependent Claims

Appellants respectfully assert that dependent Claims 52-58 and 59-65 are allowable at least because of their respective dependencies from independent Claims 1 and 30 respectively, and the reasons set forth above. Thus, the rejection of dependent Claims 52-58 and 59-65 are improper and should be reversed.

E. Conclusion

In view of the foregoing, Appellants respectfully requests the reversal of the Examiner's rejection and allowance of the pending claims. If there are any other fees due in connection with the filing of this Appellants' Brief, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. §1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account No. 50-0310.

Respectfully submitted,  
**MORGAN LEWIS & BOCKIUS LLP**

Dated: December 11, 2006

By: 

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**8. Claims Appendix**

Claim 1. (Previously Presented) An electrical connector for mounting to a substrate, comprising:

a modular insulative connector housing having first and second end pieces including holes formed therethrough and first and second hold-down tabs, respectively, for mounting said insulative connector housing to a substrate, said first and second end pieces comprising two separate pieces and the first hold-down tab extends laterally from a side of the first end piece and the second hold-down tab extends laterally from a side of the second end piece, wherein the location of the first hold-down tab is staggered relative to the location of the second hold-down tab; and

a plurality of contact pins held in the holes of the insulative connector housing.

Claims 2-29. Cancelled.

Claim 30. (Previously Presented) An electrical connector assembly, comprising:

a male connector comprising a male connector housing and a plurality of male contact pins held in said male connector housing, said male connector housing having first and second staggered mounting extensions for mounting said male connector housing to a first substrate; and

a female connector comprising a female connector housing and a plurality of female contact pins held in said female connector housing, said female connector housing having first and second end pieces having holes formed therethrough for receiving the female contact pins and having first and second staggered mounting extensions, respectively, for mounting said female connector housing to a side of a second substrate, the first and second end pieces

comprising two separate structural pieces, wherein the first mounting extension extends laterally from a side of the first end piece and the second mounting extension extends laterally from a side of the second end piece, and

wherein at least a portion of said male connector is adapted to be received within said female connector such that said male contact pins contact said female contact pins to establish an electrical connection therebetween.

Claims 31-51. Cancelled.

Claim 52. (Previously Presented) The electrical connector according to claim 1, wherein said first and second end pieces are joined together.

Claim 53. (Previously Presented) The electrical connector according to claim 52, wherein said first and second end pieces are joined together using an adhesive bond.

Claim 54. (Previously Presented) The electrical connector according to claim 1, further comprising a center piece having holes formed therethrough, the center piece comprising a separate piece from the first and second end pieces, wherein the first and second end pieces are joined to opposite ends of the center piece.

Claim 55. (Previously Presented) The electrical connector according to claim 54, wherein the first and second end pieces are joined to opposite ends of the center piece using adhesive bonds.



Claim 56. (Previously Presented) The electrical connector according to claim 1, wherein each of the first and second end pieces includes a polarization feature.

Claim 57. (Previously Presented) The electrical connector according to claim 1, wherein said connector housing mounts to a printed circuit board.

Claim 58. (Previously Presented) The electrical connector according to claim 1, wherein said connector housing is an edge connector housing.

Claim 59. (Previously Presented) The electrical connector assembly according to claim 30, wherein said first and second end pieces are joined together.

Claim 60. (Previously Presented) The electrical connector assembly according to claim 59, wherein said first and second end pieces are joined together using an adhesive bond.

Claim 61. (Previously Presented) The electrical connector assembly according to claim 30, wherein said female connector housing further comprises a center piece having holes formed therethrough, the center piece comprising a separate piece from the first and second end pieces, wherein the first and second end pieces are joined to opposite ends of the center piece.

Claim 62. (Previously Presented) The electrical connector assembly according to claim 61, wherein the first and second end pieces are joined to opposite ends of the center piece using adhesive bonds.

Claim 63. (Previously Presented) The electrical connector assembly according to claim 30, wherein each of the first and second end pieces includes a polarization feature.

Claim 64. (Previously Presented) The electrical connector assembly according to claim 30, wherein said female connector housing mounts to a printed circuit board.

Claim 65. (Previously Presented) The electrical connector assembly according to claim 30, wherein said female connector housing is an edge connector housing.

**9. Evidence Appendix**

No information is appended under this section.

**10. Related Proceedings Appendix**

No information is appended under this section.